

## **Comparison of the Theoretical and Experimental Reflectance for a One-Dimensional Rough Surface with Roughness Greater than a Wavelength**

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The validity of relations derived from the Kirchhoff approximation for determining the intensity reflectance of a one-dimensional rough surface within a diffraction solid angle in the specular direction has been studied. Theoretical predictions have been compared with the measured reflectance of a unidirectional ground steel sample (rms roughness of 1.3  $\mu\text{m}$  and 15.2  $\mu\text{m}$  correlation length) at  $\lambda = 0.633 \mu\text{m}$  and a  $4^\circ$  angle of incidence. The sample was covered by one of two square masks of 1 mm  $\times$  1 mm or 1.5 mm  $\times$  1.5 mm. Good agreement between reflectance values calculated from measured profile data and measured reflectance values was found.